

Academic research on MALL in Brazil: a systematic review

Pesquisa acadêmica em MALL no Brasil: uma revisão sistemática

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Abstract

This paper aims at presenting an overview of academic research developed in Brazil on foreign language Mobile Assisted Language Learning (MALL) from 2009 to 2019. A systematic review was conducted on Catalog of Theses and Dissertations from CAPES. The search retrieved 15 publications, mostly published on from 2017 to 2019. It was revealed that the majority of studies were developed on a Language Studies program of the Southeast region and that there are more dissertations (from master studies) than theses (from PhD studies) published on the subject matter. The objectives found were: (i) evaluation of language learning applications; (ii) evaluation of other types of electronic resources related to education; (iii) development of language learning application; (iv) systematic review; (v) survey on MALL; (iv) assessment of language learning activities mediated by mobile devices at schools. The results pointed out the need for modernizing language learning applications in terms of language views, methodologies and game elements. The use of MALL in class was fruitful to improve linguistic proficiency, collaboration, and agency.

Keywords: Mobile assisted language learning. Foreign language learning. Systematic review.

Resumo

Este artigo tem como objetivo apresentar um panorama da pesquisa acadêmica desenvolvida no Brasil em Aprendizagem de Línguas Mediadas por Dispositivos Móveis (em inglês, MALL) relativa a línguas estrangeiras e considerando o período de 2009 a 2019. Foi realizada uma revisão sistemática no Catálogo de Teses e Dissertações da CAPES. A busca recuperou 15 publicações, em sua maioria publicadas de 2017 a 2019. A pesquisa revelou que a maioria dos estudos foi desenvolvida em um programa de Estudos da Linguagem da região Sudeste e que há mais dissertações do que teses publicadas sobre o assunto. Os objetivos encontrados foram: (i) avaliação de aplicativos de aprendizagem de línguas; (ii) avaliação de outros tipos de recursos eletrônicos relacionados à educação; (iii) desenvolvimento de aplicativo de aprendizagem de línguas; (iv) revisão sistemática; (v) levantamento no MALL; (iv) avaliação das atividades de aprendizagem de línguas mediadas por dispositivos móveis nas escolas. Os resultados apontaram a necessidade de modernizar os aplicativos de aprendizagem de línguas em termos de visões da linguagem, metodologias e elementos de jogos. O uso do MALL nas aulas foi frutífero para melhorar a proficiência linguística, a colaboração e a agência.

Palavras-chave: Aprendizagem de línguas mediadas por dispositivos móveis. Aprendizagem de línguas estrangeiras. Revisão sistemática.

1 Introduction

Throughout human history, the discovery of technologies such as fire, the wheel, writing, the press, and the computer has revolutionized the interaction of human beings in their social and natural environment. However, in the history of technology, there has never been a technological enterprise that

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has caused such a number of changes, in a short period, as with the use of mobile technology, particularly, the mobile phone. According to 2019 data from the International Telecommunication Union (ITU), the number of mobile phone subscriptions in the world grew from 33.9% in 2005 to 76.6% in 2010 and to 98.2% in 2015, with an estimation of reaching 108.0% in 2019. It is, therefore, a technology that practically comprises the entire population of the planet.

The expansion of access to mobile technologies has considerably influenced the development of new teaching approaches. In this scenario, pedagogies towards Mobile Assisted Language Learning (MALL), both for formal and informal educational settings, are increasing in terms of teaching practice, academic research, and technological development. According to Kukulska-Hulme and Shield (2008, p. 27), “MALL differs from computer-assisted language learning in its use of personal, portable devices that enable new ways of learning, emphasizing continuity or spontaneity of access and interaction across different contexts of use”. These new ways of learning often include SMS, email, internet access, voice and audio recording features, video player and numerous applications that were specifically designed for language learning.

Recent research on MALL has been focusing on contextualized learning, flexibility and active community participation of the learner. In this sense, Çakmak (2019, p.38) explains that “the community-driven dimension is vital in a MALL context where directing or setting up activities can be the responsibility of the peer group rather than of the teacher and learner solely”. Carvalho (2018) mentions flipped classroom, peer instruction, serious games, and gamification, as examples of active methodologies which can enhance learning through mobile devices and accomplish this idea of a personalized, flexible, and collaborative learning.

Though MALL is still an emerging issue in education, there have been some publications presenting systematic reviews on this theme in the last decade worldwide (UZUNBOYLU and GENC, 2017; VIBERG and GRONLUNG, 2012; PERSSON and NOURI, 2018). Considering specifically the issue of foreign language learning, this paper aims at conducting a systematic literature review in order to provide an overview of how academic research has been approaching MALL in Brazilian higher education institutions.

2 Method

A systematic review is a form of research that uses the literature of a given topic as its source of investigation in order to synthesize and provide a critical appreciation of the information selected. It differs from traditional narrative literature review since it provides “more transparent accounts of the searching

process, the decisions about what should be included and excluded in the review, with clear criteria for quality assessment of the research studies discussed” (URQUHART, 2010, p. 2). The systematic review, therefore, requires a detailed methodology as well as the presentation of the sequence of steps applied to the research.

Though this methodology is mostly employed in the health sector with the development of evidence-based medicine, it has spread from the clinical disciplines to education and welfare (URQUHART, 2010). In the field of Human Sciences, a systematic review provides the crossing among results obtained from various studies, applying techniques from quantitative and qualitative research, such as, for instance, statistical and content analysis, respectively. In short, while Health Sciences combine the results of each study to obtain an overall estimate of the treatment effect, Human Sciences elaborate an interpretative integrative synthesis for the understanding of the investigated problem and the scope of its elucidation (GONÇALVES et al, 2015).

Due to the profusion of information within the virtual environment, Vergnano-Junger (2015, p. 56) highlights that a systematic review demands capacities for selection, comparison, organization, and criticality. The author, then, establishes some principles to undertake a careful mapping of academic productions:

- a) Prefer specialized searchers, focused on academic materials, or portals for academic-scientific publications.
- b) Perform searches using parameters that refine the results: ranges of publication dates (with emphasis on the most recent); type of documents (.pdf, or .html, for example); type of writing (abstracts, full articles).
- c) Once the materials are found in the searcher's listings, make an initial selection, always thinking about the theme and problem in focus, using titles as the first support, and then moving on to the abstracts.
- d) In the articles/abstracts selected in the first screening, make a more detailed survey, seeking to recognize and evaluate: authors, source of the publication (including its classification), confirmation of the date of publication. If any of these items are missing, unclear or conflicting, there are resources that the Internet itself provides for clarification. The researcher can, therefore, search for the author's name on the net, or on institutional curriculum websites (...).
- e) A final practice may be to expand research, based on the references and bibliographies in the selected texts. Often the materials can be found on the internet, increasing the field of study and

allowing linking with authors and founding texts of the topics in question. (VERGNANO-JUNGER, 2015, p. 70).

Considering the criteria aforementioned, in this study, a systematic literature review was conducted in order to reach the current state-of-the-art of MALL in Brazil. To this end, we chose the Catalog of Theses & Dissertations from CAPES (Coordination for the Improvement of Higher Education Personnel), since the Catalog is specialized in the publication of productions that are research results of graduate programs recognized by the Ministry of Education. Therefore, the publications under analysis in this review are theses both from academic and professional postgraduation programs.

We applied, separately, three sets of keywords with quotes in order to find as many productions as possible within the scope of research and considered the last decade as a search parameter. The inclusion criteria applied to this systematic review are summarized below.

- (i) Period considered: between 2009 and 2019.
- (ii) Types of productions considered: theses (from PhD studies) and dissertations (from master studies).
- (iii) Sources of searches: Catalog of Theses and Dissertations from CAPES.
- (iv) Theme: research conducted on foreign language learning through the method of mobile learning.
- (v) Area of knowledge: Linguistics, Human Sciences, and Applied Social Sciences.
- (vi) Languages of the researched productions: Portuguese.
- (vii) Keywords used: (I) “language learning” AND “mobile learning”; (II) “language learning” AND “mobile technology” (III) “language learning” AND “mobile devices”.

Following the phase of selection, the analysis was undertaken from a mixed method perspective, employing quantitative accounts and content analysis to compare and interpret the results. Content analysis is a scientific method that allows a systematic analysis of written, verbal, and other resources within the framework of specified concepts and themes (UZUNBOYLU and GENC, 2017).

Through the analysis, we sought to answer the questions hereafter exposed.

1. How is the distribution of research on MALL according to year of publication, subject areas, document type and Brazilian regions?
2. What are the primary objectives of research on MALL?

3. What results are presented by research on MALL?

Having established the general criteria and the research questions which guided this systematic review, in the following section, we display the results and considerations of data analysis.

3 Results and discussion

The selection of the publications which would compose the literature review was set out in three stages. In the first stage, we applied the keywords to the bank of theses and dissertations chosen, which yielded the following amounts of publications: (I) “language learning” AND “mobile learning” – 12 publications; (II) “language learning” AND “mobile technology” – 6 publications; (III) “language learning” AND “mobile devices” – 13 publications. It is noticeable that the publications retrieved through Capes database were not a large amount and that the first researches found dated from 2013. Owing to this fact, it was not necessary to apply filters related to the period and area of knowledge. From this initial stage, a total of 31 publications were selected and organized on a list.

The second stage demanded that the title of each publication was read in order to exclude repeated publications, achieving, then, a total of 18 publications. In the third stage, it was necessary to read the abstract of each publication to ensure that they were related to the theme under scrutiny in this review. After a careful reading, three publications were excluded, since they covered mobile learning but not foreign language learning. These excluded publications dealt with teacher formation, mother tongue teaching at schools and a mobile learning general survey. The stage of selection generated a final list of 15 publications.

3.1 Distribution of research on MALL in Brazil

Regarding the distribution of research on MALL over the years, it was revealed that there were no theses or dissertations published before 2013, which attests to the novelty of this research field. Considering the increase in numbers of publications from 2017, it is possible to infer that MALL is becoming an emerging subject on graduate research in Brazil. Such an increase is depicted in chart 1, considering the number of publications per year.

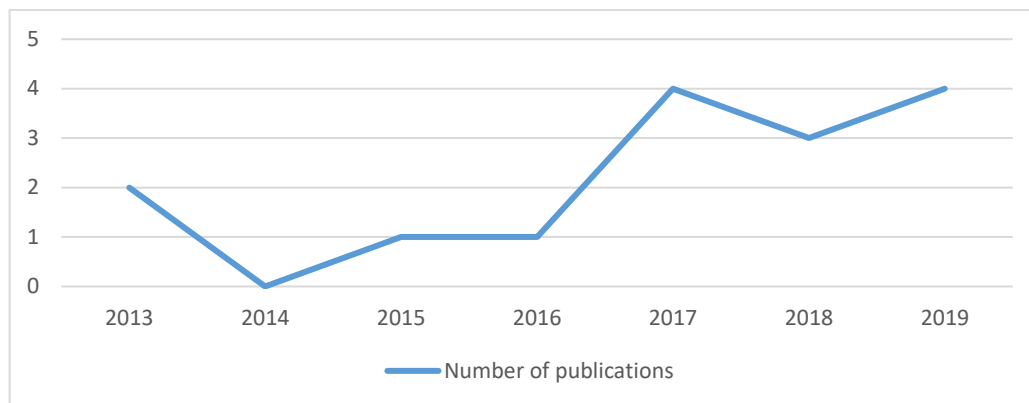


Chart 1. Distribution of publications over the years
Source. The authors

In terms of distribution among subject area, it was revealed that the majority of the researches were conducted on a program of Language Studies (six publications), followed by Applied Linguistics (four publications), Linguistic (three publications), Design (one publication) and Education and New Technologies (one publication). Since no filter on the area of knowledge was applied to the search, the absence of researches conducted on Computer Sciences is somewhat remarkable.

The inquiry about the distribution of research on MALL according to document type revealed that the publications are primarily dissertations from academic programs (eight publications), followed by theses from academic programs (six publications), and a dissertation from a professional program (one publication). The searches retrieved no publications on theses from professional programs since professional doctorates were only institutionalized in the country in 2017.

The analysis concerning the distribution of research on MALL according to Brazilian regions revealed that the majority of publications are from the Southeast (eight publications), followed by the South (five publications) and Northeast (two publications). North and Center-West regions showed no publications related to the theme under investigation. It is noteworthy to highlight that four of these studies were developed at universities in the state of São Paulo, and that, among them, three were published by the State University of Campinas (UNICAMP). This might be related to the fact that São Paulo is the state with the highest per capita income in the country and, therefore, using mobile devices for foreign language learning as a part of technological development is frequently studied.

3.2 Primary objectives of research on MALL in Brazil

In order to investigate the objectives of each study conducted on MALL, a careful reading of the introductory chapter and, in some cases, of the chapter of the method was undertaken. It was, then,

possible to verify that the scope of the studies is relatively broad within the theme of foreign language learning mediated by mobile phones. The analysis retrieved the following topics: (i) evaluation of language learning applications; (ii) evaluation of other types of electronic resources related to education; (iii) development of language learning application; (iv) systematic review; (v) survey on MALL; (iv) assessment of language learning activities mediated by mobile devices at schools. It was observed that two research could be located in two categories since they comprised a distinct focus of investigation under the theme of application development (ANDRADE, 2017; ANDRADE, 2019).

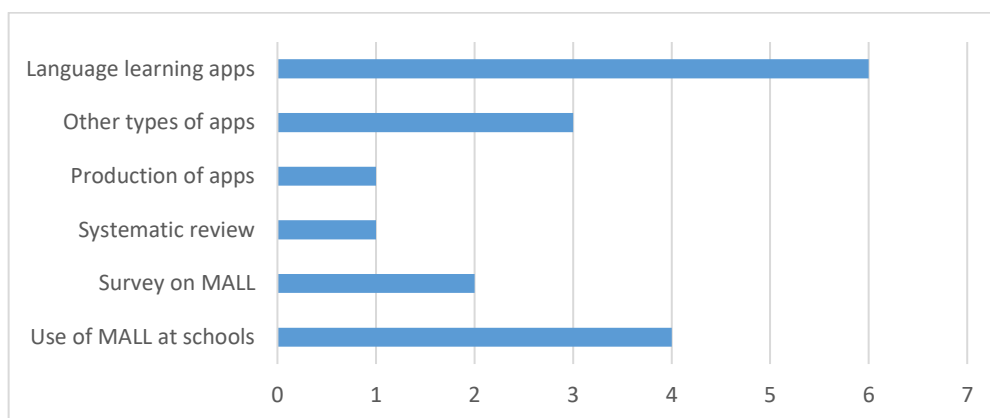


Chart 2. Focus of investigation on data
Source. The authors

The most prominent topic on data was the evaluation of language learning apps (FARHAT, 2016; NAZÁRIO, 2017; ANDRADE, 2017; SANTOS, 2017; KIRINUS, 2018; ANDRADE, 2019). Each study tended to provide an overview of the educational app or apps under investigation, while also focusing on some specific characteristics, such as language view and teaching method (ANDRADE, 2017; SANTOS, 2017), automatic feedback (KIRINUS, 2018), game elements (ANDRADE, 2019), interface and usability (NAZÁRIO, 2017; SANTOS, 2017); elaboration of criteria to evaluate apps (FARHAT, 2016). Regarding the choice of apps, Duolingo was selected by most researchers (five out of six studies), followed by Babbel (four studies), Bussu, Mosalingua and Memrise (two studies each). Other apps also analyzed were Bravolol, Learn 50 languages, Audios To Learn Spanish, Spanish Courses, Languing, Wlingua, Mondly, Mosalingua and Le Bon Mot (one study of each).

Still concerning the evaluation of electronic tools for language learning, three publications proposed the analysis of apps whose design is not focused on teaching a language (MARTINS, 2018; SANTOS, 2019; ANDRADE, 2019). Considering that a dictionary gives support to language learning, but does not teach languages directly, one of these studies analyzed an offline bilingual dictionary app, which

composes the Quicktionary TS, a portable, hand-held scanning translator (MARTINS, 2018). A messaging software, named WhatsApp, was evaluated in terms of pedagogical potentials for language learning (SANTOS, 2019). Game elements of the electronic game Clash Royal were analyzed to inform which elements mobilized language and, thus, enabled language learning (ANDRADE, 2019).

Another topic that emerged was the development of a language learning app, presented on 1 publication (ANDRADE, 2017). Previous to the production phase, the author evaluated some educational apps in order to reflect upon characteristics that would be avoided or included in the pedagogical frame of the app. The experiment, then, consisted of elaborating on the instructional design and the digital prototype of the application Vecindário, the latter in collaboration with researchers from the area of computer sciences.

There was one publication whose objective was to produce a systematic review, through the process of meta-analysis, on language learning mediated specifically by mobile phones (ALDA, 2013). The research portrays the selection and analysis of a set of studies published in the proceedings of the International Conference on Mobile Learning at IADIS, from 2008 to 2012, under the aforementioned theme.

Two studies proposed surveys on MALL in order to investigate some aspects related to the learning process (GOMES, 2015; ROPPEL, 2017). The aspects under scrutiny involved: influences and normalization of mobile technologies for language learning from the perspective of high school students, teachers and staff (GOMES, 2015) and the possibilities and limitations of Duolingo as a support learning tool for learners enrolled on a language school (ROPPEL, 2017). The instruments applied to generate data on these surveys were questionnaires and interviews.

In the field of language learning mediated by mobile devices at schools, four publications were retrieved (COSTA, 2013; ALDA, 2018; KHATCHADOURIAN, 2019; ZANCANARO, 2019). These studies present similarities since they (i) consist on investigations of teaching/learning English in the context of public high schools; (ii) include the students own mobile phones to the learning process; (iii) analyze the students' perception about the proposed activities, the interactions developed and the emerging learning opportunities. The research focus of each study concern interrelation of mobile learning and the following pedagogical aspects: development of linguistic proficiency and visual literacies in blended learning (COSTA, 2013); the effects of a project-based collaborative learning methodology (ALDA, 2018); the effects of a task-based learning methodology (KHATCHADOURIAN, 2019); the interactional axes emerging from the use of a game application in the classroom (ZANCANARO, 2019). Other specificities comprise the pedagogical activities promoted by the researchers, which include: speaking activities

recorded through audio and video, listening and visual interpretations of video clips shared by Bluetooth, grammar and vocabulary reviews through SMS-quizzes (COSTA, 2013); a writing/design activity of an invitation and the production of a video (KHATCHADOURIAN, 2019); the production of a short film as a school project (ALDA, 2018); the use of Quizlet Live for assessing learning (ZANCANARO, 2019).

3.3 *Research results on MALL in Brazil*

The last element under investigation on this systematic review is the results presented by research on MALL, which demanded a careful reading of the concluding chapter of the selected publications. In general, the data indicates that most of the results were favorable to the use of mobile devices for learning foreign languages, though some studies report negative findings and limitations. The investigation of the specific results of each research was guided by the topics retrieved during the investigation of the objectives so that it was possible to compare results.

The majority of research focused on language learning application provide negative criticism towards the apps' language views and teaching method (ANDRADE, 2017; SANTOS, 2017; FARHAT, 2016; KIRINUS, 2018; ANDRADE, 2019). It is argued that the pedagogical choices of the analyzed apps are not aligned with a contemporary language view, since all of them focus on repetition and translation to teach languages, disregarding communicational contexts (FARHAT, 2016). Besides, in an analysis of Duolingo, Busuu, and Babbel, it was found that the feedback mostly used was of the generic type, which only assesses the user's response as right or wrong, providing limited learning strategies (KIRINUS, 2018). Also, the analysis concerning game elements on Duolingo revealed that the implementation of these elements is very limited, pointing to an enormous need to improve the use of these elements in applications aimed at language learning (ANDRADE, 2019). However, there is no consensus regarding language learning apps. An analysis of Duolingo was favorable in terms of interface and usability (NAZÁRIO, 2017), and that, according to the author, tends to guarantee a continuous use of the app, enhancing possibilities of linguistic proficiency.

Yet, in the category of researches evaluating pedagogical possibilities of other types of applications, promising results concerning language learning are presented. It was found that the offline bilingual dictionary app Quicktionary TS is in accordance with the field of Educational Lexicography, speeds the information access by just scanning the text, provides the pronunciation of the scanned words or phrases, and enables the use of games to work on vocabulary (MARTINS, 2018). The experience with WhatsApp displayed several affordances in the learning process, such as producing a script of a speech,

recording different audio versions, and listening to audios shared by the teacher and other colleagues (SANTOS, 2019). The analysis of Clash Royal demonstrated that the game is a valuable resource for language learning since the app mobilizes language, that is contextually situated, in a variety of game elements, such as the chat of the clan, the videos of the game community, the articles published by the game company, the names and technical information of the cards, and the instructions for the battle and the missions (ANDRADE, 2019).

The publication concerning the development of a language learning app highlights both positive and negative results from the test phase of the prototype, though the positive aspects overcome the negative ones (ANDRADE, 2017). The positive results regarding the technical aspects include the choice of the Android operating system, which made the application accessible to most participants and proved to be stable, and the choice of Login via Facebook, which facilitated the identification of users for data analysis and increased security, avoiding access by robots. In relation to language pedagogy, since the app was customized considering the learning needs of students from a specific school, some aspects were positively highlighted by the participants who tested the prototype, such as the creation of content that was inserted in a context close to the student. However, the test also showed negative results regarding the interrelation of technical and pedagogical aspects in terms of usability.

The systematic review that was undertaken by one research, concerning language learning mediated specifically by mobile phones, depicts a favorable overview of the use of the cell phone for learning (ALDA, 2013). The revised studies are consensus in terms of positive aspects in relation to students' motivation in language learning. It was also found that the challenges in using this tool are not technical, but didactic and methodological, including the need to reflect on practical proposals. It is noticeable that this systematic review, considering the period from 2008 to 2012, revealed that among all the features of the mobile phone, the applications have gained prominence on academic research, which is also distinctly observable on the present systematic review on MALL in Brazil, though the period covered here is singularly more recent.

The two publications that deal with a survey on MALL present quite different results (GOMES, 2015; ROPPEL, 2017). The study investigating the use of mobile technologies for language learning in the context of a high school reveals that most students still have a very traditional view of the ways considered valid and correct to learn English (as a foreign language), with few students being able to signify the learning possibilities offered by mobile devices as legitimate (GOMES, 2015). On the other hand, the other study, which was conducted at a language school, found that most of the students pursue extra study time using Duolingo through their mobile phones, being fully aware of the apps' potentials

(vocabulary acquisition and pronunciation improvement), but also indicating some limitations (the absence of idiomatic expressions and the slow pace of game elements) (ROPPEL, 2017). Comparing these results, it is possible to infer that the learners from the language school are more motivated to learn a foreign language, since they include in their study repertoire other learning opportunities, going beyond what is required from the language school.

The last topic, which discusses the implementation of MALL at high schools, raises interesting proposals for mobile learning pedagogy (COSTA, 2013; ALDA, 2018; KHATCHADOURIAN, 2019; ZANCANARO, 2019). The use of SMS, Bluetooth and recording resources from mobile phones proved to effectively personalize tasks, provide feedback and corrections, extend student contact with English, and narrow the difference between formal and informal learning (COSTA, 2013). The production of a short film, founded on a project-based collaborative learning methodology, required that the students not only worked on basic technological skills, but also on creativity in the sense that they established themselves as content producers, which directly resulted in increased motivation and satisfaction in learning (ALDA, 2018). The research about the task-based learning activities mediated by mobile phones demonstrates how the technology is capable of destabilizing or sustaining learning spaces, highlighting that the latter was only achieved when the task proposal was opened for the students to assume the role of protagonists, generating, then, meaningful learning and agency (KHATCHADOURIAN, 2019). Last of all, the use of Quizlet Live in the classroom promoted a hybrid interaction, which is defined by the author as an interaction that occurs when the interactants are face to face, but need to make use of a digital resource to foster their interactions; and it was observed that this interaction elevated the students' involvement in the pedagogical activity (ZANCANARO, 2019).

4. Conclusion

The primary objective of this study was to investigate how research on Mobile Assisted Language Learning has been developed in Brazil. To this end, a systematic review (URQUHART, 2010; GONÇALVES et al, 2015; VERGNANO-JUNGER, 2015) was conducted on Catalog of Theses and Dissertations from CAPES, which publishes research results of graduate programs recognized by the country's Ministry of Education. The search was limited to the issue of foreign language learning and the period from 2009 to 2019.

It was revealed that most studies were developed on a Language Studies program and that none of them were from a Computer Sciences program. Also, it was found that the publications are

concentrated on the Southeast region, mainly in the state of São Paulo, followed by the South and, then, the Northeast region. The search retrieved no publications from the North and Center-West regions. Another finding was that the publications are primarily dissertations from academic programs.

Concerning the question about objectives of research, the analysis retrieved the following topics: (i) evaluation of language learning applications; (ii) evaluation of other types of electronic resources related to education; (iii) development of language learning application; (iv) systematic review; (v) survey on MALL; (iv) assessment of language learning activities mediated by mobile devices at schools. Though varied in terms of research focus, most of the publications deal with the issue of apps in language learning.

Finally, regarding the role of applications for language learning, the results strongly indicate the need for modernization in terms of language views, methodologies and game elements. The data also presents other resources from mobile devices that can complement language learning, such as SMS, Bluetooth, e-mail, internet access, video, and audio recording. Though motivation is pointed out as an important factor in the use of mobile phones for language learning, the data highlights that digital technology should not be used as a mere substitute for notebooks or dictionaries. It is shown that it is not only possible but advisable to integrate mobile learning to learner-centered teaching methods, for instance, Task-based learning and Project-based learning, since it can lead to the development of agency.

References

ALDA, L. S. *O telefone celular e a aprendizagem de línguas: uma meta-análise qualitativa de estudos publicados entre 2008 e 2012 nos anais da conferência internacional em aprendizagem móvel*. Pelotas: Mestrado em Letras. Universidade Federal Católica de Pelotas, 2013.

ALDA, L. S. *Metodologias (cri)ativas na escola: A multiplicidade da aprendizagem de língua inglesa baseada em projetos*. Pelotas: Doutorado em Letras. Universidade Federal de Pelotas, 2018.

ANDRADE, I. R. *Vecindario: uma proposta de aplicativo para aprendizagem de línguas assistida por dispositivos móveis*. Campinas: Doutorado em Linguística Aplicada. Universidade Estadual de Campinas, 2017.

ANDRADE, M. R. *Jogos Digitais, Tecnologias Móveis e Aprendizagem de Línguas: uma avaliação dos elementos de jogos em dispositivos móveis*. Belo Horizonte: Doutorado em Estudos de Linguagens. Centro Federal de Educação Tecnológica de Minas Gerais, 2019.

ÇAKMAK, F. Mobile Learning and Mobile Assisted Language Learning in Focus. *Language and Technology*. Volume: 1. Issue: 1, 2019, p.30-48. Retrieved March 15, 2020 from <https://dergipark.org.tr/en/download/article-file/665969>

CARVALHO, A. A. A. Formação docente na era da mobilidade: metodologias e aplicativos para envolver os alunos rentabilizando os seus dispositivos móveis. *Revista Tempos E Espaços Em Educação*, 11(01), 2018, p. 25-36. Retrieved March 15, 2020 from <https://seer.ufs.br/index.php/revtee/article/view/10047>

COSTA, G. S. *Mobile learning. Letramento visual crítico. Agência. Affordance. Ensino de inglês como LE*. Recife: Doutorado em Letras. Universidade Federal de Pernambuco, 2013.

FARHAT, N. G. K. M. *Um estudo exploratório e propositivo sobre avaliação de aplicativos móveis para aprendizagem de línguas*. Campinas: Mestrado em Linguística Aplicada. Universidade Estadual de Campinas, 2016.

GOMES, C. B. M. *Normalização de dispositivos móveis no processo de aprendizagem de inglês: um estudo à luz da complexidade*. Uberlândia: Mestrado em Estudos Linguísticos. Universidade Federal de Uberlândia, 2015.

GONÇALVES, H. A.; NASCIMENTO, M. B. C.; NASCIMENTO, K. C. S. Revisão Sistemática e Metanálise Níveis de Evidência e Aplicabilidade em Pesquisa Científica. *Investigação Qualitativa em Educação*, Volume 2, 2015, p. 386-389. Retrieved March 20, 2020 from <https://proceedings.ciaiq.org/index.php/ciaiq2015/issue/view/4>

INTERNATIONAL COMMUNICATION UNION (ITU). *Measuring digital development 2019*. Retrieved March 20, 2020 from <https://itu.foleon.com/itu/measuring-digital-development/mobile-vs-fixed/>

KHATCHADOURIAN, L.F. P. *O uso do smartphone em uma sala de aula de língua estrangeira em escola pública na ótica da teoria autor-rede*. Campinas: Doutorado em Linguística Aplicada. Universidade Estadual de Campinas, 2019.

KIRINUS, R. R. *Inglês na palma da mão: análise de aplicativos educacionais como recurso para aprendizagem de línguas com foco no feedback*. Porto Alegre: Mestrado em Letras. Universidade Federal do Rio Grande do Sul, 2018.

KUKULSKA-HULME, A.; SHIELD, L. An overview of mobile assisted language learning: From content delivery to supported collaboration and interaction. *ReCALL*, 20(3), 2008, p. 271–289. Retrieved March 20, 2020 from <http://oro.open.ac.uk/11617/>

MARTINS, E. M. V. *Descrição e avaliação de um Quicktionary bilingue offline usado na aprendizagem de língua inglesa*. Fortaleza: Doutorado em Linguística Aplicada. Universidade Estadual do Ceará, 2018.

NAZÁRIO, F. S. *Da mochila à palma da mão: aprendizagem de línguas em contexto múltiplo*. Rio de Janeiro: Mestrado em Design. Pontifícia Universidade Católica do Rio de Janeiro, 2017.

PERSSON, V; NOURI, J. A Systematic Review of Second Language Learning with Mobile Technologies. *International journal of Emerging Technologies in Learning*, 2018. Retrieved March 20, 2020 from <https://online-journals.org/index.php/i-jet/article/view/8094>

ROPPEL, S M. *O uso das tecnologias de informação e comunicação no ensino de língua espanhola: estudo do aplicativo Duolingo*. Curitiba: Mestrado Profissional em Educação e Novas Tecnologias. Centro Universitário Internacional Uninter, 2017.

SANTOS, C. S. *Affordances do celular e potencialidades do WhatsApp no trabalho com as habilidades orais em português língua adicional (PLA)*. Belo Horizonte: Mestrado em Estudos Linguísticos. Universidade Federal de Minas Gerais, 2019.

SANTOS, Y. C. W. *A aprendizagem de francês através de aplicativos para smartphone*. Porto Alegre: Mestrado em Letras. Universidade Federal do Rio Grande do Sul, 2017.

URQUHART, C. Systematic reviewing, meta-analysis and metasynthesis for evidence-based library and information science. *IR Information Research*, v. 15, n. 3, 2010. Retrieved March 20, 2020 from <http://informationr.net/ir/15-3/colis7/colis708.html>

UZUNBOYLY, H.; GENÇ, Z. Analysis of Documents Published in Scopus Database on Foreign Language Learning Through Mobile Learning: A Content Analysis. *Profile: Issues in Teachers' Professional Development*. Volume 19, 2017, p. 99-107. Retrieved March 20, 2020 from <https://revistas.unal.edu.co/index.php/profile/article/view/68624>

VERGNANO-JUNGER, C. Letramento na era da informação: a questão da leitura em meio digital na pesquisa científica universitária. *Matraga – Revista do Programa de Pós-Graduação em Letras da UERJ. Linguística Aplicada: questões sobre letramento*. v.22, n. 36, 2015, p 56-75. Retrieved March 25, 2020 from <http://www.e-publicacoes.uerj.br/index.php/matraca/article/view/17047>

VIBERG, O. V.; GRONLUND, A. Mobile Assisted Language Learning: A Literature Review. *Proceedings of mLearn 2012 - Mobile and Contextual Learning*. Helsinki, Finland, 2012, p. 9-16. Retrieved March 25, 2020 from <http://oru.diva-portal.org/smash/record.jsf?pid=diva2%3A544324&dswid=-5692>

ZANCANARO, J. G. S. *O uso do Quizlet live em sala de aula de língua inglesa no ensino técnico integrado ao Ensino Médio: identificando eixos interacionais*. Araraquara: Mestrado em Linguística e língua portuguesa. Universidade Estadual Paulista Julio de Mesquita Filho, 2019.

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